AIR COOLED CONDENSERS
Research Cottrell Dry Cooling (RCDC) is part of a multi-national Group with over 100 years of experience in the design and supply of cooling technologies to the power industry, as well as other energy intensive sectors. Research-Cottrell Dry Cooling (RCDC) engineers, manufactures, delivers and erects complete air cooled condensers for power and industry.

Global organisation

RCDC runs an integrated organisation of 4 main offices located in Europe, US, China, Korea and India which form the global template of experts dedicated to dry cooling. RCDC retains a wealth of experience and knowledge within its technical and executive staff reaching to the highest levels of its organisation. This includes a significant number of those involved with the original development of the single row concept and subsequent establishment of manufacturing facilities for the single row fin tube bundle. Such knowledge and experience renders RCDC uniquely placed to offer a highly developed fin tube bundle together with the highest levels of quality and service in the supply of the latest design of air cooled steam condenser technology.
Global and Local Manufacturing

RCDC offers a wide scope of tube technologies from the multi-row fin tubes to the single row fin tube bundles, for all applications in air cooled condensing.

The Group strategy is to maintain a network of factories all over the world. The actual global capacity exceeds 6000 bundles a year serving the local and regional clients from:

- Europe / France
- Middle East / Saudi Arabia
- Far East / Korea
- USA / Pennsylvania
- Asia / China
- Central Asia / India

All the factories of the Group form a network, which provides multiple backups to the production requirements enabling RCDC to supply ACC for very small units (biomass, waste incineration plants) to the mega packages (blocks of 660 MW coal fired for India, China and South Africa, CCGT packages for Saudi Arabia, etc.).

Best and complete engineering packages

RCDC designs, engineers, manufactures and supplies air cooled condensers for steam power plants such as coal-fired, combined cycles, co-generation, biomass and waste for any destination, whatever temperatures and environment conditions.

RCDC regular scope of work comprises the air cooled condenser as well as the auxiliary equipment such as:

- tanks and pumps
- vacuum units with complete piping valves fittings and instrumentation

RCDC has the in house capabilities to design complex systems and supply turnkey packages.
Why Dry Cooling,

Why “dry”?
Over the last 20 years, the dry cooling systems for power plants have gained an increasing interest as an alternative to the wet cooling systems. They are likely to be preferred in the following circumstances:

- Early permission to build a power plant is usually in favor of the dry cooling for which locations are in greater numbers and permits received earlier
- Water supply is an issue whether water is not/poorly available or made too expensive or a sensitive subject today or tomorrow;
- The plume of the wet towers even reduced by use of a hybrid wet cooling tower is not welcome for various reasons.

RCDC™ Single Row Tube
RCDC launches the RCDC™ single row tube as the basis for its latest, state-of-the-art air cooled steam condenser supported by many years experienced technical staff and experts who promoted the early single row tube in the years 90's.

The RCDC™ single row tube improves the levels of performance of all single row tubes promoted to date as it offers:

1. Winter freeze protection (–40°C and below)
2. Lowest auxiliary power (low pressure drops)
3. Lowest noise levels
4. Limited plot area (compact units)
5. No loss of performance at all temperature ranges
6. No environmental impact and full recyclability

More than 50,000 MW of power plants around the world, under all climate conditions, sea shore and land, are using single row technology.
Increased power production
The CTEC maximizes both the power output during the winter time as well as the summer time via a maximized transfer rate. The CTEC is of all exchangers the technology maintaining a uniform distribution of steam between cold and warm sections of the fin tube bundles during operation by extreme temperatures. One of the major reasons of the loss of performance is therefore absent from the CTEC.

Non-freezing
The CTEC is the ultimate self-adjusting protection during deep freezing conditions. Multi-row (MR) technologies have a dramatic uneven performance within the tube bundles causing backflow of steam hence resulting in the so called dead zone where ice start forming at a rapid pace until it reaches the tube section. Many MR condensers have burst a series of tubes causing immediate stop of the plant for some time.

Minimum Sub-cooling
Sub-cooling is a well-known phenomenon for air condensers. Thanks to the wide tube section, the steam velocities are reduced to a minimum and hence minimize the so called sub cooling effect.

Low air side fouling
The lean, smooth and single non disrupted fin surface results in a near no deposit behavior of the CTEC. Reversely, the multiple tube design and change of shape from row retain high quantities of dust and debris on the fin surface resulting in loss of performance.

No air side dead spots
The CTEC design is exempt from dead spots.

Ecological
The CTEC is ecological in many ways: high degree of recyclability, no rain washing and ground pollution by heavy metals such as zinc and lead.
RCDC References

Isvg Wilrijk, Belgium - 2012 - 1 module
Stanari, Bosnia-Herzegovina - 2011 - 30 modules
Beer Tuvia, Israel - 2014 - 16 modules
Ramat Negev, Israel - 2012 - 6 modules

Ridham Dock, UK - 2013, 5 modules
North Yorkshire, UK - 2015 - 6 modules

Agua Prieta 2, Mexico - 2011 - 28 modules
Baja California, Mexico - 2011 - 2 modules
Enertek, Mexico - 2013 - 6 modules
A3T, Mexico - 2014 - 12 modules
Norte 3, Mexico - 2015 - 2 x 32 modules

Sonara, Cameroun - 2011 - 3 modules

Saudi Arabia - 2012-2014 - 16 ACC - 452 modules
Qassim, Saudi Arabia - 2014 - 25 modules

Fort St James, Canada - 2014 - 6 modules
Merrit, Canada - 2014 - 6 modules

Sonara, Cameroun - 2011 - 3 modules

Kirkclareli, Turkey - 2009 - 5 modules

Stanari, Bosnia-Herzegovina - 2011 - 30 modules
Beer Tuvia, Israel - 2014 - 16 modules
Ramat Negev, Israel - 2012 - 6 modules
Ridham Dock, UK - 2013, 5 modules
North Yorkshire, UK - 2015 - 6 modules
Changzhi Xinlong, China - 2014 - 2 x 30 modules
Xiaoyill, China - 2013 - 16 modules
Tashan II, China - 2013 - 2 x 56 modules
Xuangang, China - 2014 - 2 x 56 modules
Lanshan Tune, China - 2014 - 3 x 9 modules

Xinfa, China - 2011 - 16 modules
Xiaoji, China - 2012 - 9 modules
Taiyuan II, China - 2014 - 2 x 28 modules

Shouyang, China - 2012 - 9 modules

Hong Kong Sludge - 2011 - 4 modules
Busan, Korea - 2011 - 8 modules

Changzhi Xinlong, China - 2014 - 2 x 30 modules
Xiaoyill, China - 2013 - 16 modules
Tashan II, China - 2013 - 2 x 56 modules
Xuangang, China - 2014 - 2 x 56 modules
Lanshan Tune, China - 2014 - 3 x 9 modules
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